

Remarks

The Official Action rejected claims 1, 3-19, and 21-27. Applicant has amended claims 1, 4-19, and 21-25 and canceled claim 3. Claims 1, 4-19, and 21-27 remain pending in the application. Applicants believe the present application as amended is in condition for allowance. Allowance of claims 1, 4-19, and 21-27 is therefore earnestly solicited.

Withdrawing of Final Office Action

The Office Action indicated in item 7 (Response to Arguments) that the arguments with respect to claims 1, 3-19, and 21-27 have been considered but are moot in view of the new ground(s) of rejection. The Applicant respectfully requests the Examiner to treat the Office Action (which is Final) of 29 January 2010 as a Non-Final Office Action in view of the new grounds for rejection.

Claim Rejections – 35 USC § 103

The Office Action rejected claims 1, 3-19, and 21-27 under 35 USC 103 (a) as being unpatentable over Shen et al (7,221,714). Applicant has amended claims 1, 4-19, and 20-25 to include limitations not taught by Sten. For example, Sten discloses (please see col. 2, lines 8-15) that it is desirable to if a non-systematic code could be developed that could provide a performance comparable to the systematic and linear codes that provide for greatest performance. Sten, therefore, is dealing with (see the title: Non-systematic and Non-linear Parallel Concatenate Trellis Coded Modulation PC-TCM) non-linear codes (please see col. 2 line 53, non-linear trellis encoding). However,

the instant claims are using low-density parity-check (LDPC) code, which is linear (please see http://en.wikipedia.org/wiki/Low-density_parity-check_code and Line 2 on page 6 of the document titled: LDPC Codes: An Introduction by Amin Shokrollahi available at <http://www.ics.uci.edu/~welling/teaching/ICS279/LPCD.pdf>).

Also, Sten is teaching (please see col. 3 lines 14-19) a $\frac{3}{4}$ constituent encoder forming 16 Quadrature Amplitude Modulated (QAM) symbols and the symbol mapper is a 16n QAM symbol mapper. However, the instant claims are directed to generating symbols using Pulse Amplitude modulation (PAM) symbols.

Sten fails to disclose the ratio of un-coded bits and coded bits that are used to generate the output symbols. For example, Sten discloses (please see col. 2, lines 62-65) that the symbol mapper may be implemented such that it selects at least one un-coded bit while generating at least one output symbol of the plurality of output symbols. However, the instant claims clearly state that the number of un-coded bits used while generating an output symbol is $\frac{1}{3}$ of the coded bits and each symbol that is generated would have the coded and un-coded bits in that ratio. The ratio in which un-coded and coded bits are used to generate output symbols may provide maximum information bits per symbol.

Thus, Sten fails to teach all the limitations taught by the independent claims 1, 9, and 18. Therefore, Applicants respectfully request the rejection of independent claims 1, 9, and 18 and the dependent claims 4-8, 10-17, and 19-27 be withdrawn.

Conclusion

The foregoing is submitted as a full and complete response to the Official Action. Applicants submit that the application is in condition for allowance. Reconsideration is requested, and allowance of the pending claims is earnestly solicited. Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #02-2666. If the Examiner believes that there are any informalities, which can be corrected by an Examiner's amendment, a telephone call to the undersigned at (503) 439-8778 is respectfully solicited.

Respectfully submitted,

Date: March 29, 2010

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